

Study of hip fractures at a tertiary care center

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Abstract

Background: Hip fractures are one of the most common traumatic injuries in the elderly, incidence is increasing continuously due to the ageing of population. The prognosis of patients with acute hip fractures depends primarily on age, comorbidities, anticoagulation therapy, and the general physical health status. The purpose of this study is clinical analysis of patients hip fractures admitted in our tertiary care hospital. **Material and Methods:** This prospective, observational study was conducted in patients with hip fracture at tertiary care hospital. **Results:** During study period we had total 124 patients with hip fracture, females were 64.52%. Most common age group in hip fractures was 61 -80 years (71.78%). In our study 88.7% patients managed by surgery. Hypertension (62.9%), diabetes mellitus (53.22%), COPD (16.93%) leading medical conditions in patients with hip fracture. We operated 54.84% patients within 48 hours of admission. Mean hospital stay was 12 days. **Conclusion:** Hip fracture is a serious trauma with life-long morbidity, also mortality in high risk cases. Treatment consist of early stabilisation, surgery within 48 hours, early rehabilitation.

Keywords: Hip fractures, early surgery for hip fracture, management of hip fracture

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Hip fractures are common in elderly population and a major cause of mortality and morbidity, the 1-year mortality rate is approximately 10-20%.³ Hip fracture is a devastating experience for the individual. It is accompanied by pain, stress and loss of mobility and independence in the acute phase. It also can potentially adverse affect the individual's mobility, independence, quality of life and social functioning after the fracture. Prevention and early treatment of these injuries is essential as hip fractures put-on serious problems for both the health care policy makers and health organizations. The prognosis of patients with acute hip fractures depends primarily on age, comorbidities, anticoagulation therapy, and the general physical health status⁴. The purpose of this study is clinical analysis of patients hip fractures admitted in our tertiary care hospital.

INTRODUCTION

Hip fractures are one of the most common traumatic injuries in the elderly, incidence is increasing continuously due to the ageing of population¹. It has been predicted that by 2050, the number of hip fractures would triple because of increased longevity, osteoporosis and sedentary habits². Hip fractures may be intra-capsular or extra-capsular depending on anatomical position. The most common hip-fractures are cervical or femoral neck fractures and are intra-capsular fractures, others are trochanteric and subtrochanteric fractures and the least common are the basicervical fractures. Fracture neck femur are the most common accounting for 51%, followed by intertrochanteric fractures (38%), the subtrochanteric (8%), basicervical (3%) of hip fractures.

MATERIAL AND METHODS

The study design was prospective observational, conducted in the Department of Orthopedics, Rajarshree Chhatrapati Shahu Maharaj Govt. Medical College and Chhatrapati Pramila Raje Hospital, Kolhapur. Duration of study was 1 year from May 2018 to April 2019. All patients with hip fracture were included in the study. Written informed consent was obtained from patients. Approval for the study taken from institutional ethics

committee. Basic demographic details, clinical evaluation, associated comorbid conditions, lab investigations, treatment and follow up was noted in clinical proforma. Data was collected in microsoft excel sheet and analyzed accordingly.

RESULTS AND DISCUSSION

The primary goal of treatment in hip fractures is early restoration of premorbid walking ability and excellence of life by providing comprehensive management. Hip fracture management includes pre-hospital care, management in the emergency department, pre- and postoperative care, discharge planning and rehabilitation. During study period we had total 124 patients with hip fracture. Out of 124 patient's majority were females (64.52 %). Majority in females can be explained by loss of protective effect of estrogen on bone mineralization, low calcium diet, general negligence towards health, etc⁵. Bishnoi *et al*⁶ had male predominance in hip fractures cases. They stated that in Indian population, osteoporosis is also common in males due to lack of awareness about bone health, nutritional factors, smoking, physical inactivity. Most common age group in hip fractures was 61 -80 years, comprising almost 71.78 %, 16.94% from age group 41 -60 years, while 8.87% from >80years. More prevalence of hip fracture in age group of 61-80 years can probably due to low peak bone mass because of low vitamin D and dietary calcium intake. Lifetime risk of hip fracture was estimated as 23.3% for men and 11.2% for women⁷. The treatment of choice for hip fracture is surgery. Femoral neck fractures, if undisplaced, are usually treated with screws or pins, while displaced fractures need either partial or total hip replacement surgery, known as hemi- or total arthroplasty. Trochanteric and subtrochanteric fractures require dynamic hip screw placement or sliding screw fixation or the intramedullary nail. In our study 88.7 % patients managed by surgery, which is in accordance with guidelines by Bergslagens Grafiska AB *et al*⁸. Rest 11.3 % were conservatively managed, mainly due to presence of co-morbidities. Increase in survival age, sedentary habits, changes in diet pattern, lack of exercise brings various medical co-morbid conditions. In our study we

had hypertension (62.9%), diabetes mellitus (53.22%), COPD (16.93 %) leading medical conditions in patients with hip fracture. Other morbidities were heart failure, ischemic heart disease, dementia, chronic kidney disease, malignancy. Most of times multiple conditions were present simultaneously in patients. There is mounting evidence indicating that timing of surgery might play a major role in survival after hip fracture^{9,10}. Studies suggest that a delay of surgery can significantly increase the risk of morbidity and mortality in elderly patients¹¹. We operated 54.84 % patients within 48 hours of admission. Most of patients were unfit due to combination of multiple factors as old age, associated medical conditions, polytrauma patients, anaesthetic fitness, etc. Mechanisms for how early surgery decreases mortality is unclear. But raised inflammatory markers are seen in patients undergoing hip-fracture surgery, which are proportional to the extent of trauma¹². Delayed surgery have prolonged inflammatory response, this can lead to an increased risk of infection, delirium, and cardiovascular complications, contributing to higher mortality rates¹³. Hospital stay is in directly proportion with age of patient, co-morbidities, type of surgery and outcome in terms of immediate and long-term complications. Mean hospital stay was 12 days, while minimum duration of hospital stay was 5 days and maximum duration was 32 days with the average being 12 days. Early surgery, early ambulation, aggressive management of other medical conditions helped us to reduce duration of hospital stay. Han *et al*¹⁴. reported average hospital stay of 18 days, which is more than that of our study. Marya *et al*¹⁵ and Rajak *et al*¹⁶ reported a mean length of stay of 11.9 and 15.3 days, respectively, in Indian patients. We have noted total 10 deaths during 1 year of follow up. 3 (2.42 %) deaths were within 1 month of hip fracture, 5 (4.06 %) deaths in 1-6 month of hip fracture and 2 (1.62 %) deaths were from 6 months to 1 year of hip fracture. Only 3 deaths were noted in age below 80 years, one was a case of polytrauma, while other 2 were taking treatment for malignancy. Rest 7 patients were more than 80 years age, having 2 or more medical conditions.

Table 1:

Age wise distribution		
Age group	No. of patients	Percentage
< 20	0	0
21-40	3	2.42
41-60	21	16.94
61-80	89	71.77
> 80	11	8.87
Gender distribution		
Male	44	35.48
Female	80	64.51
Hip fracture location		
Intertrochanteric	96	77.42
Neck of femur	24	19.35
Sub trochanteric	4	3.22
Associated comorbidities		
Heart failure	7	5.64
IHD	8	6.45
Dementia	4	3.22
Chronic kidney disease	12	9.67
Diabetes mellitus	66	53.22
Hypertension	78	62.90
COPD	21	16.93
Malignancy	7	5.64
Table 4 – management		
Conservative	14	11.29
Surgical	110	88.71
Table – 5 Admission to surgery interval		
24-48 hrs	68	54.84
48 hrs – 7 days	22	17.75
> 7 days	34	27.41
Table 6 - Average length of stay in hospital		
Up to 7 days	73	58.87
7-15 days	27	21.77
> 15 days	24	19.36
Complications		
Wound infection	5	4.03
Non-union or malunion	8	6.45
Required re-operation	3	2.42
Anaesthetic complications	3	2.43
Others	11	8.87
Mortality		
Within 1 month	3	2.42
1-6 months	5	4.06
> 6 months	2	1.62

CONCLUSION

Hip fractures are increasing in number day by day. hip fracture is a serious trauma with life-long morbidity, also mortality in high risk cases. Treatment consist of early stabilisation, surgery within 48 hours, early rehabilitation. But mainly modification in simple routine factors such as proper nutrition, adequate calcium and vitamin D intake, exercise, no smoking, moderate alcohol consumption, hormone replacement therapy in early menopausal patients, regular eye check-ups can definitely prevent and improve outcome of hip fractures.

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